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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,666	08/07/2001	Hiroaki Abe	SON-2183	1397

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RADER FISHMAN & GRAUER PLLC
LION BUILDING
1233 20TH STREET N.W., SUITE 501
WASHINGTON, DC 20036

EXAMINER
FLORES RUIZ, DELMA R

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/922,666	ABE, HIROAKI	
	Examiner	Art Unit	
	Delma R. Flores Ruiz	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 August 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) *12-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Paul Ip

PAUL IP
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of 1-11 in Paper No. 8 is acknowledged. Applicant's election with traverse of claims 1 – 11 drawn to a laser diode in Paper No. 8 is acknowledged. The traversal is on the ground(s) that the applicant's submit that the various embodiments are do closely related as to not requires separate field of search and a duplicative search. This is not found persuasive, because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

The is not found persuasive because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II restriction for examination purposes as indicated is proper.

This application contains claims 12 – 16 drawn to an invention nonelected with traverse in Paper No. 8. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3 – 5, 7, and 10 – 11, are rejected under 35 U.S.C. 102(e) as being anticipated by Nemoto (6,358,764 B1).

Regarding claims 1 and 7, Nemoto discloses a laser diode comprising: a first clad layer (see Fig. 12, Character 32) of a first conductivity type formed on a substrate (see Fig. 12, Character 30); an active layer (see Fig. 12, Character 33) formed at an upper layer of said first clad layer; a second clad layer (see Fig. 12, Character 34) of a second conductivity type formed at an upper layer of said active layer; a third clad layer (see Fig. 12, Character 37) of the second conductivity type formed at an upper layer of said second clad layer in a current injection stripe region (Abstract, Column 13, Lines 49 – 59, Column 14, Lines 35 – 41, and Column 15, Lines 1 – 61); a contact layer (see Fig. 17, Character 46a) formed at an upper layer of said third clad layer; and an electrode (see Fig. 26 Character 42 and 43) formed so as to connected said contact layer; whereby when a first current is injected from said electrode via said contact layer by applying a predetermined voltage to said electrode and laser light in emitted from a

laser light oscillation region near said active layer, a second current which is smaller than said first current is injected in regions other than said current injection stripe region from said electrode via said second clad layer and currents at ends of said laser light oscillation region are controlled for self pulsation and a degree of self pulsation can be adjusted by a thickness of said third clad layer and width of said current injection stripe region (Abstract, Column 4, Lines 6 – 68, Column 5, Lines 1 – 29, Column 9, Lines 40 – 68, Column 10, Lines 37 – 52, Column 13, Lines 49 – 59, Column 14, Lines 35 – 41, and Column 15, Lines 1 – 61).

Regarding claims 3 and 4, Nemoto dislcoses a second clad layer comprises a AlGaInP based material (Column 9, Lines 48 – 58) and a material of said electrode at a portion contacting said second clad layer comprises titanium (see Figs, 12, 26, Column 17, Lines 48 – 55).

Regarding claim 5, Nemoto dislcoses a electrode comprises stacked layer of titanium, platinum and gold and formed so as to contact said second clad layer and contact layer from the titanium side (see Figs, 12, 26, Column 17, Lines 48 – 55).

Regarding claim 10 and 11 Nemoto discloses a semiconductor light emitting device comprising: a plurality of laser diode elements, wherein at least one of said diode elements comprises; a first clad layer (see Fig. 12, Character 32) of a first conductivity

type formed on a substrate (see Fig. 12, Character 30); an active layer (see Fig. 12, Character 33) formed at an upper layer of said first clad layer; a second clad layer (see Fig. 12, Character 34) of a second conductivity type formed at an upper layer of said active layer; a third clad layer (see Fig. 12, Character 37) of the second conductivity type formed at an upper layer of said second clad layer in a current injection stripe region (Abstract, Column 13, Lines 49 – 59, Column 14, Lines 35 – 41, and Column 15, Lines 1 – 61); a contact layer (see Fig. 17, Character 46a) formed at an upper layer of said third clad layer; and an electrode (see Fig. 26 Character 42 and 43) formed so as to connected said contact layer; whereby when a first current is injected from said electrode via said contact layer by applying a predetermined voltage to said electrode and laser light in emitted from a laser light oscillation region near said active layer, a second current which is smaller than said first current is injected in regions other than said current injection stripe region from said electrode via said second clad layer and currents at ends of said laser light oscillation region are controlled for self pulsation (See Figs. 5 – 28a, Abstract, Column 4, Lines 6 – 68, Column 5, Lines 1 – 29, Column 9, Lines 40 – 68, Column 10, Lines 37 – 52, Column 13, Lines 49 – 59, Column 14, Lines 35 – 41, and Column 15, Lines 1 – 61).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 6, 8 - 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nemoto (6,358,754) in view of Uchida (6,009,112).

Regarding claims 2 and 6 Nemoto discloses the claimed invention except for saturable absorption region are formed at said ends of the laser light oscillation region for self pulsation and etching stop layer between said second clad layer an third clad layer. It would have been obvious at the time of applicant's invention, to combine Uchida of teaching a saturable absorption region are formed at said ends of the laser light oscillation region for self pulsation and etching stop layer between said second clad layer an third clad layer with laser diode because the etching stop layer acts not only as a layer for terminating the etching effect but also as a passivation layer for preventing oxidation of the cladding.

Regarding claims 8 – 9 Nemoto discloses the claimed invention except for thickness of said third clad layer is in rage is 0.1μm to 0.7μm and a width of said current injection stripe region is in a range of 1.5μm to 5μm. It would have been obvious at the time of applicant's invention, to combine Uchida of teaching a thickness of said third clad layer is in rage is 0.1μm to 0.7μm and a width of said current injection stripe region is in a range of 1.5μm to 5μm with laser diode because it would have been obvious to one of ordinary skill in the art at the time the invention was made to thickness of said third clad layer is in rage is 0.1μm to 0.7μm and a width of said current injection stripe region is in a range of 1.5μm to 5μm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (703) 308-6238. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

Delma R. Flores Ruiz
Examiner
Art Unit 2828

Paul Ip
Supervisor Patent Examiner
Art Unit 2828

DRFR/PI
April 3, 2003